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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/099,794	03/15/2002	Bich-Yen Nguyen	SC11360TP P01	5563

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MOTOROLA INC
AUSTIN INTELLECTUAL PROPERTY
LAW SECTION
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EXAMINER

LE, DUNG ANH

ART UNIT

PAPER NUMBER

2818

DATE MAILED: 08/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

CH

Office Action Summary	Application No. 10/099,794	Applicant(s) NGUYEN ET AL.	
	Examiner DUNG A LE	Art Unit 2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 42-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1- 18 is/are allowed.
- 6) ☐ Claim(s) 42-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

[Handwritten signature]

Detailed Action

Claims 19- 40 are non-elective claims in Paper No. 4.

Claims 41 has been canceled in paper No. 7.

Claims 1-18 and 42-45 are pending in this Application.

Claim Objections

Claim 14 is objected to because of the following informalities::

In claim 14, line 12, change "the dielectric" to - - second dielectric - -

Set of claims 42-45.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 42 is rejected under 35 USC 102 (e) as being anticipated by Yamazaki et al. (6432561).

Yamazaki discloses a semiconductor structure (column 1, line 65 to column 2, line 1) comprising:

- a semiconductor substrate 101;
- a dielectric feature 100 comprising lanthanum, aluminum, nitrogen and oxygen over the semiconductor substrate 101.

Regarding claims 43, the dielectric feature consists of nitrated lanthanum aluminate. (col 4, line 44)

Claims 44-45 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Yamazaki as applied in claim 42 above, in view of the following remark.

Yamazaki discloses the claimed invention except for the dielectric feature comprises one of a gate dielectric, an etch stop layer, a trench liner, and a sidewall spacer liner and the dielectric feature functions as a diffusion barrier.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the dielectric feature comprises one of a gate dielectric, an etch stop layer, a trench liner, and a sidewall spacer liner and the dielectric feature functions as a diffusion barrier, because the high-K dielectric material is commonly used to allow more flexibility for scaling the thickness of the gate dielectric, an etch stop layer, a trench liner, a sidewall spacer liner and a diffusion barrier.

Allowable Subject Matter

The following is a statement of reason for the indication of allowable subject matter:

Claims 1- 18 are considered allowable since the prior made of record and considered pertinent to the applicant's disclosure does not teach or suggest the claimed limitations. Yamazaki et al. (6432561) and prior art in record, taken individually or in combination, do not teach the claimed invention having (Regarding claim 1) an electrode layer over the dielectric layer a dielectric layer comprising lanthanum, aluminum, nitrogen and oxygen, over the semiconductor substrate, (Regarding claim 10) an second conductive layer over the dielectric layer a dielectric layer comprising lanthanum, aluminum, nitrogen and oxygen, over the first conductive layer and (Regarding claim 14) the second dielectric layer comprising lanthanum, aluminum, nitrogen and oxygen, over the first dielectric layer and an electrode layer over the second dielectric.

If Applicants are aware of better art than that which has been cited, they are required to call such to attention of the examiner.

When responding to the office action, Applicants' are advice to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist the examiner to locate the appropriate paragraphs.

A shortened statutory period for response to this action is set to expire 3 (three) ~~months and 0 (zero) day from the day of this letter. Failure to respond within the period~~ for response will cause the application to become abandoned (see M.P.E.P 710.02(b)).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung A. Le whose telephone number is 703-306-5797. The examiner can normally be reached on Monday-Friday 8:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 703-308-4910. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Dung A. Le
Examiner
Art Unit: 2818

